

**METHOD FOR INCREASING THE EFFICIENCY OF A GAS TURBINE SYSTEM
AND GAS TURBINE SYSTEM SUITABLE THEREFOR**

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application is the US National Stage of International Application No. PCT/EP2004/007385, filed July 06, 2004 and claims the benefit thereof. The International Application claims the benefits of German Patent application No. 10335143.4 filed July 31, 2003. All of the applications are incorporated by reference herein in their entirety.

FIELD OF THE INVENTION

[0002] The invention relates to a method for increasing the efficiency of a gas turbine system in accordance with the claims as well as to a gas turbine system suitable therefor in accordance with the claims.

BACKGROUND OF THE INVENTION

[0003] As a result of intensive development work in recent years higher levels of efficiency, i.e. the ratio of electrical or mechanical power able to be generated in relation to the fuels used of around 40%, can be achieved with gas turbines. Combined cycle gas turbine (CCGT) systems, as are known for example from EP 0898 641 A1, make it possible to go beyond this and achieve efficiencies of over 55%. Despite this there is still a need to further increase the efficiency of such systems.

[0004] This applies in particular to gas turbine systems constructed in the past without steam generation as well as to CCGT systems which have been constructed in the low, medium and high power ranges. Some of these CCGT systems will be or have been provided with a remote heat decoupling for improving the fuel utilization. Despite this these older systems exhibit significantly lower levels of efficiency than modern gas turbine systems. Because of enormous cost pressure the operators of old systems with lower levels of efficiency are therefore forced to improve the cost effectiveness of their systems.

[0005] The operators of gas turbine systems without steam generation are therefore expanding their process or their system in some cases with a steam generation component. The additional generation of electrical or mechanical energy that this makes possible means that they obtain a better yield from the fuels used and thereby an improvement in the
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